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EXAMINER

SAMS, MATTHEW C

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/004,786	Applicant(s) LINDSKOG ET AL.	
	Examiner MATTHEW SAMS	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,7,8,10-16 and 18-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,7,8,10-16 and 18-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 12/29/2009 have been fully considered but they are not persuasive.

2. As an initial matter, in response to the Applicant's statement that "except for for the Examiner's "Response to Arguments" section, it appears that the office actions are essentially identical" (Page 7), the Examiner respectfully disagrees.

The rejections to claims 5, 8, 19-21, 24 and 25 were changed to further include the reference Stewart et al. (US-6,732,176), which had previously been applied to claims 1, 3, 7, 10, 11, 13-16, 18 and 23, but was viewed by the Examiner as a significant enough change to the rejection to warrant another non-final rejection. Stewart was added to explicitly recite a portable computing device (Fig. 6 [110]) comprising a NIC (Col. 2 lines 20-23 & Col. 5 line 65 through Col. 6 line 1) that is used for communicating with an access point (Fig. 6 [120]) over the IEEE 802.11 wireless network standard. (Col. 5 lines 8-11)

The previous office action (9/30/2008) stated the change on the bottom of page 2 as well as before the rejection of the claims (middle of page 11), therefore the Applicant's arguments to the previous rejection of Beach in view of Larsson and Chen (Pages 10-11) are viewed as spurious since the arguments are not directed to the current rejection.

3. In response to the applicant's argument regarding claims 1, 3, 7, 10, 11, 13-16, 18 and 23 that the examiner "has not pointed to any disclosure in Stewart that, in

Art Unit: 2617

combination with the disclosures of Beach and Larsson, would teach the specific claimed interaction among the mobile terminal, the wireless network card, and the access point" (Pages 8-10), the examiner disagrees.

The BPAI found "no disclosure of any kind of interaction with a wireless network card". Therefore, the teaching of Stewart which say that a "wireless Ethernet card" (*i.e.* NIC) is used by a "portable computing device" to communicate with a "wireless access point", is analogous art. In other words, the Examiner's view of the BPAI findings is that the cited references lacked any teaching of a NIC (and without a NIC, interactions with the NIC were also lacking), therefore the Examiner tried to remedy the deficiency by introducing Stewart.

Stewart teaches the use of portable computing device (Fig. 6 [110]) which uses a NIC (Col. 2 lines 20-23 & Col. 5 line 63 through Col. 6 line 4 *i.e.* wireless Ethernet card) for communicating with an access point (Fig. 6 [120]) over the IEEE 802.11 wireless network standard. (Col. 5 lines 8-11) Therefore, the Examiner believes the combined teachings of Beach in view of Larsson and Stewart would lead one of ordinary skill in the art to recognize that when the mobile units of both Beach and Larsson are communicating with their respective access points or base stations (Beach Col. 5 lines 15-46 and Larsson Col. 5 line 52 through Col. 6 line 9), the mobile units are utilizing network interface cards like that as taught by Stewart. (Stewart Col. 5 line 63 through Col. 6 line 4)

Further, the Examiner views the combined teachings of Beach in view of Larsson and Stewart as disclosing the claimed interactions among the mobile terminal, the

Art Unit: 2617

wireless network card and the access point. Beach in view of Larsson teaches the ability to conserve power in a mobile device by only turning on a radio receiver at specific times to determine if the base station has queued information to be transmitted to the mobile device. (Larsson Col. 4 line 43 through Col. 5 line 3 and Col. 5 lines 52-57) Beach in view of Larsson teaches the mobile terminal sends a hibernation request to the base station in order to save power. (Larsson Col. 5 lines 4-10) Beach in view of Larsson does not explicitly recite the use of the NIC, however this is taught by Stewart. If the generic radio receiver and radio transmitter of Beach in view of Larsson is replaced by the wireless Ethernet card of Stewart, the Examiner believes the cited art teaches the Applicant's claimed interactions:

- The mobile terminal requesting a transition from an active state to a less active station (Larsson Col. 5 lines 4-37, specifically lines 4-5)
- Upon which request, the NIC sends a request to the AP that the mobile terminal be allowed to be entered into WLAN sleep state (Larsson Col. 5 lines 4-7 and Stewart Col. 5 line 63 through Col. 6 line 4)
- On receiving an acknowledgement from the AP, the mobile terminal enters WLAN sleep state. (Larsson Col. 5 lines 7-12)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2617

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 7, 10, 11, 13-16, 18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beach (US-6,067,297) in view of Larsson et al. (US-6,463,307 hereinafter, Larsson) and Stewart et al. (US-6,732,176 hereinafter, Stewart).

Regarding claim 1, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) (Col. 1 line 65 through Col. 2 line 18) that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures (Col. 1 lines 32-41 & line 65 through Col. 2 line 16), an access point (Col. 2 line 17) and an operating system compatible with a plurality of the power states. (Col. 2 lines 59-64 and Col. 6 lines 54-59)

Beach differs from the claimed invention by not explicitly reciting a mobile terminal that requests for a transition from an active state to a less active state, upon which request, the NIC sends a request to the access point that the mobile terminal be allowed to be entered into a WLAN sleep state and on receiving an acknowledgement from the AP, the mobile terminal enters WLAN sleep state.

In an analogous art, Larsson teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 3 lines 20-60) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in a mobile terminal of Beach after modifying it to incorporate the ability for a mobile terminal to enter and exit the power saving mode of Larsson by specifically enabling the mobile to request such transitions. One of

Art Unit: 2617

ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal and lets the access point know to queue messages for the mobile terminal. (Col. 2 lines 33-64)

Beach in view of Larsson teaches a method and apparatus for power saving in a mobile terminal and Beach suggests the use of an 802.11 radio card (Col. 3 lines 8-11), however fails to explicitly recite the mobile terminal requests a NIC to communicate with the access point.

In an analogous art, Stewart teaches a communication network (Figs. 1 & 6) that includes portable computing devices (Fig. 6 [110]) comprising a NIC (Col. 2 lines 20-23 & Col. 5 line 65 through Col. 6 line 1) that is used for communicating with an access point (Fig. 6 [120]) over the IEEE 802.11 wireless network standard. (Col. 5 lines 8-11) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in mobile terminals of Beach in view of Larsson after modifying the mobile terminal to incorporate a NIC specifically for communicating with an access point using IEEE 802.11 as taught by, Stewart and thereby in response to communication requests by the mobile terminal intended for the 802.11 network, specifically having the NIC communicate with or request the AP. One of ordinary skill in the art would have been motivated to do this since a NIC provides a convenient and readily available means to enable mobile devices to communicate with wireless local area networks.

Art Unit: 2617

Regarding claim 3, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) in an ad hoc network (Col. 2 lines 35-37 and Col. 7 lines 4-7) that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures (Col. 1 lines 32-41 & line 65 through Col. 2 line 16) and an operating system compatible with a plurality of the power states. (Col. 2 lines 7-16, Col. 6 lines 54-59 and Col. 7 lines 4-7) Beach further teaches communication with a second mobile terminal. (serving as an access point Col. 5 lines 38-40)

Beach differs from the claimed invention by not explicitly reciting a mobile terminal that request for a transition from an active state to a less active state, upon which request, the NIC sends a request to a second mobile terminal in the ad hoc network that the mobile terminal be allowed to be entered into WLAN sleep state and on acknowledgement from the second mobile terminal, the mobile terminal enters the sleep state.

In an analogous art, Larsson teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 3 lines 20-60 *i.e.* the access point would be the master in an ad hoc network) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in a mobile terminal in an ad hoc network of Beach after modifying it to incorporate the ability for a mobile terminal to enter and exit the power saving mode of Larsson by specifically enabling the mobile to request such transitions. One of ordinary

Art Unit: 2617

skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal and lets the access point know to queue messages for the mobile terminal. (Col. 2 lines 33-64)

Beach in view of Larsson teaches a method and apparatus for power saving in a mobile terminal and Beach suggests the use of an 802.11 radio card (Col. 3 lines 8-11), however fails to explicitly recite the mobile terminal requests a NIC to communicate with the second mobile terminal.

In an analogous art, Stewart teaches a communication network (Figs. 1 & 6) that includes portable computing devices (Fig. 6 [110]) comprising a NIC (Col. 2 lines 20-23 & Col. 5 line 65 through Col. 6 line 1) that is used for communicating with a second mobile terminal in an ad hoc network (Col. 12 lines 6-10) over the IEEE 802.11 wireless network standard. (Col. 5 lines 8-11) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in mobile terminals of Beach in view of Larsson after modifying the mobile terminal to incorporate a NIC specifically for communicating in an ad hoc network using IEEE 802.11 as taught by, Stewart and thereby in response to communication requests by the mobile terminal intended for the 802.11 network, specifically having the NIC communicate with or request the second mobile terminal. One of ordinary skill in the art would have been motivated to do this since a NIC provides a convenient and readily available means to enable mobile devices to communicate with wireless local area networks.

Regarding claim 7, Beach in view of Larsson and Stewart teaches an access point that disassociates mobile terminals without using a disassociation signal. (Beach Col. 3 lines 22-28)

Regarding claim 10, Beach in view of Larsson and Stewart teaches a second terminal that disassociates from mobile terminals without using a disassociation signal. (Beach Col. 3 lines 22-28)

Regarding claim 11, Beach in view of Larsson and Stewart teaches a mobile terminal that associates with the access point on transition from a power saving state to an active state. (Larsson Col. 5 line 52 through Col. 6 line 9)

Regarding claim 13, Beach teaches a method for power control in a mobile terminal used in a wireless local area network (WLAN) (Col. 1 line 65 through Col. 2 line 18) that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures (Col. 1 lines 32-41 & line 65 through Col. 2 line 16), an access point (Col. 2 line 17) and an operating system compatible with a plurality of the power states. (Col. 2 lines 59-64 and Col. 6 lines 54-59)

Beach differs from the claimed invention by not explicitly reciting a mobile terminal that initializes at a point of time later than a time-out interval due to inactivity in order to lower the system state.

In an analogous art, Larsson teaches a mobile terminal that initializes at a point in time later than a time-out interval due to inactivity in order to conserve power. (Col. 1 line 66 through Col. 2 line 5 and Col. 2 lines 10-23) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of

Art Unit: 2617

power control for a mobile terminal of Beach after modifying it to incorporate the ability of a mobile terminal to initialize at a point in time later than a time-out interval as taught by Larsson. One of ordinary skill in the art would have been motivated to do this since an inactive mobile terminal conserves more battery power when in a power saving mode for a longer period of time. (Col. 2 lines 33-59)

Beach in view of Larsson teaches a method and apparatus for power saving in a mobile terminal and Beach suggests the use of an 802.11 radio card (Col. 3 lines 8-11), however fails to explicitly recite the mobile terminal requests a NIC to communicate with the access point.

In an analogous art, Stewart teaches a communication network (Figs. 1 & 6) that includes portable computing devices (Fig. 6 [110]) comprising a NIC (Col. 2 lines 20-23 & Col. 5 line 65 through Col. 6 line 1) that is used for communicating with an access point (Fig. 6 [120]) over the IEEE 802.11 wireless network standard. (Col. 5 lines 8-11) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in mobile terminals of Beach in view of Larsson after modifying the mobile terminal to incorporate a NIC specifically for communicating with an access point using IEEE 802.11 as taught by, Stewart and thereby in response to communication requests by the mobile terminal intended for the 802.11 network, specifically having the NIC communicate with or request the AP. One of ordinary skill in the art would have been motivated to do this since a NIC provides a convenient and readily available means to enable mobile devices to communicate with wireless local area networks.

Regarding claim 14, Beach in view of Larsson and Stewart teaches a method for power saving in which the mobile terminal goes from a power saving mode to an active mode when data is pending for transmission. (Beach Col. 10 lines 28-35 and Col. 11 line 33 through Col. 12 line 7)

Regarding claim 15, Beach in view of Larsson and Stewart teaches a timer in the mobile terminal used to initiate the mobile terminal to enter a power saving state. (Larsson Fig. 4 [406])

Regarding claim 16, Beach in view of Larsson and Stewart teaches a NIC that enters its lowest power consumption mode. (Beach Col. 8 lines 35-42)

Regarding claim 18, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) in an ad hoc network (Col. 2 lines 35-37) that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures (Col. 1 lines 32-41 & line 65 through Col. 2 line 16) and an operating system compatible with a plurality of the power states. (Col. 2 lines 7-16, Col. 6 lines 54-59 and Col. 7 line 4-7)

Beach differs from the claimed invention by not explicitly reciting a mobile terminal that requests for a transition from a less active state to a more active state, upon which the NIC enters a more active state.

In an analogous art, Larsson teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 3 lines 20-60 *i.e.* the access point would be the master in an ad hoc network) At the time the invention was made, it would

Art Unit: 2617

have been obvious to one of ordinary skill in the art to implement the method of power saving in a mobile terminal in an ad hoc network of Beach after modifying it to incorporate the ability for a mobile terminal to enter and exit the power saving mode of Larsson by specifically enabling the mobile to request such transitions. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal and lets the access point know to queue messages for the mobile terminal. (Col. 2 lines 33-64)

Beach in view of Larsson teaches a method and apparatus for power saving in a mobile terminal and Beach suggests the use of an 802.11 radio card (Col. 3 lines 8-11), however fails to explicitly recite the mobile terminal requests a NIC to communicate with the second mobile terminal.

In an analogous art, Stewart teaches a communication network (Figs. 1 & 6) that includes portable computing devices (Fig. 6 [110]) comprising a NIC (Col. 2 lines 20-23 & Col. 5 line 65 through Col. 6 line 1) that is used for communicating with a second mobile terminal in an ad hoc network (Col. 12 lines 6-10) over the IEEE 802.11 wireless network standard. (Col. 5 lines 8-11) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in mobile terminals of Beach in view of Larsson after modifying the mobile terminal to incorporate a NIC specifically for communicating in an ad hoc network using IEEE 802.11 as taught by, Stewart and thereby in response to communication requests by the mobile terminal intended for the 802.11 network, specifically having the NIC

Art Unit: 2617

communicate with or request the second mobile terminal. One of ordinary skill in the art would have been motivated to do this since a NIC provides a convenient and readily available means to enable mobile devices to communicate with wireless local area networks.

Regarding claim 23, Beach in view of Larsson and Stewart teaches a NIC that enters its lowest power consumption mode. (Beach Col. 8 lines 35-42)

6. Claims 5, 8, 19-21, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beach in view of Larsson, Stewart and Chen et al. (US-5,502,724 hereinafter, Chen)

Regarding claim 5, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) (Col. 1 line 65 through Col. 2 line 18) that comprises an 802.11 radio card (Col. 3 lines 8-11) compatible with IEEE 802.11 power save procedures (Col. 1 lines 32-41 & line 65 through Col. 2 line 16), an access point (Col. 2 line 17) and an operating system compatible with a plurality of power states. (Col. 6 line 54-59)

Beach differs from the claimed invention by not explicitly reciting a mobile terminal that, due to inactivity, requests for a transition from an active state to a less active state, upon which request, the NIC sends a request to the AP that the mobile terminal be allowed to be disassociated from the AP and on acknowledgement, the mobile terminal enters a disassociated state.

In an analogous art, Larsson teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power

Art Unit: 2617

saving mode and then informs the access point. (Col. 3 lines 20-60) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in a mobile terminal of Beach after modifying it to incorporate the ability for a mobile terminal to enter and exit the power saving mode of Larsson by specifically enabling the mobile to request such transitions. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal and lets the access point know to queue messages for the mobile terminal. (Col. 2 lines 33-64)

Beach in view of Larsson teaches a method and apparatus for power saving in a mobile terminal and Beach suggests the use of an 802.11 radio card (Col. 3 lines 8-11), however fails to explicitly recite the mobile terminal requests a NIC to communicate with the access point.

In an analogous art, Stewart teaches a communication network (Figs. 1 & 6) that includes portable computing devices (Fig. 6 [110]) comprising a NIC (Col. 2 lines 20-23 & Col. 5 line 65 through Col. 6 line 1) that is used for communicating with an access point (Fig. 6 [120]) over the IEEE 802.11 wireless network standard. (Col. 5 lines 8-11) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in mobile terminals of Beach in view of Larsson after modifying the mobile terminal to incorporate a NIC specifically for communicating with an access point using IEEE 802.11 as taught by, Stewart and thereby in response to communication requests by the mobile terminal intended for the

Art Unit: 2617

802.11 network, specifically having the NIC communicate with or request the AP. One of ordinary skill in the art would have been motivated to do this since a NIC provides a convenient and readily available means to enable mobile devices to communicate with wireless local area networks.

Beach in view of Larsson and Stewart differs from the claimed invention by not explicitly reciting the mobile terminal requests the access point to be disassociated or de-authenticated from the access point and then the mobile terminal enters a disassociated or de-authenticated state.

In an analogous art, Chen teaches a method for disconnection in a mobile terminal where the mobile terminal can request to be disconnected from another mobile terminal in a network. (Col. 2 line 60 through Col. 3 line 6) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving for a mobile terminal in an ad hoc network of Beach in view of Larsson and Stewart after modifying it to incorporate the ability to request to be disconnected from the network of Chen. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to enter or exit the power saving mode conserves battery power of the mobile terminal and it is quite possible that a mobile terminal would leave the effective connection range of the communication network. (Chen Col. 2 lines 9-12)

Regarding claim 8, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) in an ad hoc network (Col. 2 lines 35-37) that comprises an 802.11 radio card (Col. 3 lines 8-11) compatible with

Art Unit: 2617

IEEE 802.11 power save procedures (Col. 1 lines 32-41 & line 65 through Col. 2 line 16) usable in an ad-hoc network configuration (Col. 7 lines 4-7) and an operating system compatible with a plurality of the power states. (Col. 2 lines 7-16, Col. 6 lines 54-59 and Col. 7 line 4-7) Beach further teaches communication with a second mobile terminal. (serving as the access point Col. 5 lines 38-40)

Beach differs from the claimed invention by not explicitly reciting a mobile terminal that, due to inactivity, requests for a transition from an active state to a less active state, upon which the mobile terminal requests the second mobile terminal in the ad hoc network to be disassociated or de-authenticated from the ad hoc network.

In an analogous art, Larsson teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 3 lines 20-60 *i.e.* the access point would be the master in an ad hoc network) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in a mobile terminal in an ad hoc network of Beach after modifying it to incorporate the ability for a mobile terminal to enter and exit the power saving mode of Larsson by specifically enabling the mobile to request such transitions. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal and lets the access point know to queue messages for the mobile terminal. (Col. 2 lines 33-64)

Beach in view of Larsson teaches a method and apparatus for power saving in a mobile terminal and Beach suggests the use of an 802.11 radio card (Col. 3 lines 8-11), however fails to explicitly recite the mobile terminal requests a NIC to communicate with the access point.

In an analogous art, Stewart teaches a communication network (Figs. 1 & 6) that includes portable computing devices (Fig. 6 [110]) comprising a NIC (Col. 2 lines 20-23 & Col. 5 line 65 through Col. 6 line 1) that is used for communicating with an access point (Fig. 6 [120]) over the IEEE 802.11 wireless network standard. (Col. 5 lines 8-11) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving in mobile terminals of Beach in view of Larsson after modifying the mobile terminal to incorporate a NIC specifically for communicating with an access point using IEEE 802.11 as taught by, Stewart and thereby in response to communication requests by the mobile terminal intended for the 802.11 network, specifically having the NIC communicate with or request the AP. One of ordinary skill in the art would have been motivated to do this since a NIC provides a convenient and readily available means to enable mobile devices to communicate with wireless local area networks.

Beach in view of Larsson and Stewart differs from the claimed invention by not explicitly reciting the mobile terminal requests the AP to be disassociated or de-authenticated from the AP and on acknowledgement from the AP, the mobile terminal enters a disassociated or de-authenticated state.

In an analogous art, Chen teaches a method for disconnection in a mobile terminal where the mobile terminal can request to be disconnected from another mobile terminal in an ad hoc network. (Col. 2 line 60 through Col. 3 line 6) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving for a mobile terminal in an ad hoc network of Beach in view of Larsson and Stewart after modifying it to incorporate the ability to request to be disconnected from the network of Chen. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to enter or exit the power saving mode that conserves battery power of the mobile device and it is quite possible that a mobile terminal would leave the effective connection range of the communication network. (Col. 2 lines 9-12)

Regarding claim 19, Beach in view of Larsson, Stewart and Chen teaches a mobile terminal that is disassociated from the access point without using a disassociated signal. (Beach Col. 3 line 22-28)

Regarding claim 20, Beach in view of Larsson, Stewart and Chen teaches a mobile terminal that is disassociated from the access point without using a disassociated signal. (Beach Col. 3 line 22-28)

Regarding claim 21, Beach in view of Larsson, Stewart and Chen teaches a mobile terminal that associates with an access point on transition from a sleep mode to an awake mode. (Beach Col. 10 lines 28-35)

Regarding claim 24, Beach in view of Larsson, Stewart and Chen teaches a NIC that enters its lowest power consumption mode. (Beach Col. 8 lines 35-42)

Regarding claim 25, Beach in view of Larsson, Stewart and Chen teaches a NIC that enters its lowest power consumption mode. (Beach Col. 8 lines 35-42)

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beach in view of Larsson and Stewart as applied to claim 3 above, and further in view of van Bokhorst et al. (US-6,192,230 hereinafter, van Bokhorst).

Regarding claim 12, Beach in view of Larsson and Stewart teaches the limitations of claim 3 above, but differs from the claimed invention by not explicitly reciting a mobile terminal in an ad hoc network that associates with an ad hoc network on transition from a less active state to a more active state.

In an analogous art, van Bokhorst teaches a mobile terminal in an ad hoc network that associates with an ad hoc network on transition from a less active state to a more active state. (van Bokhorst Col. 6 lines 43-48) At the time the invention was made, it would have been obvious to one of ordinary skill in the art implement the method of power saving for a mobile terminal in an ad hoc network of Beach in view of Larsson and Stewart after modifying it to incorporate the ability of a mobile terminal to associated with an ad hoc network when transitioning to a more active state of van Bokhorst. One of ordinary skill in the art would have been motivated to do this since associating the mobile terminal in an ad hoc network when transitioning to an active state allows quicker synchronization with the network.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beach in view of Larsson, Stewart and Chen as applied to claim 8 above, and further in view of van Bokhorst et al. (US-6,192,230 hereinafter, van Bokhorst).

Regarding claim 22, Beach in view of Larsson, Stewart and Chen teaches the limitations of claim 8 above, but differs from the claimed invention by not explicitly reciting a mobile terminal in an ad hoc network that associates with an ad hoc network on transition from a less active state to a more active state.

In an analogous art, van Bokhorst teaches a mobile terminal in an ad hoc network that associates with an ad hoc network on transition from a less active state to a more active state. (van Bokhorst Col. 6 lines 43-48) At the time the invention was made, it would have been obvious to one of ordinary skill in the art implement the method of power saving for a mobile terminal in an ad hoc network of Beach in view of Larsson, Stewart and Chen after modifying it to incorporate the ability of a mobile terminal to associated with an ad hoc network when transitioning to a more active state of van Bokhorst. One of ordinary skill in the art would have been motivated to do this since associating the mobile terminal in an ad hoc network when transitioning to an active state allows quicker synchronization with the network.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 2617

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW SAMS whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2617

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617